



U.S. Department
of Transportation

Research and
Special Programs
Administration

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIAL
CERTIFICATE NUMBER USA/0166/S, REVISION 8

400 Seventh Street, S.W.
Washington, D.C. 20590

This certifies that the sources described have demonstrated their ability to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and United States of America² for the transport of radioactive materials.

1. Source Identification - Gamma Industries Model Nos. VD, VD(HP), NB, NBG, NB(HP), single encapsulation universal source, double encapsulation universal source, and single encapsulation with side weld. All sources authorized by this certificate shall have been manufactured prior to August 1, 1993.
2. Source Description - the sources authorized by this certificate are described, and have been manufactured in accordance with, the referenced and attached Gamma Industries drawings.

<u>Gamma Industries Model No.</u>	<u>Drawing No.</u>
VD and VD(HP)	602-7001-004
NB, NBG, NB(HP)	602-7001-005
Universal source, single encapsulation	602-7001-006
Universal source, double encapsulation	602-7001-007
Single encapsulation with side weld	602-7001-008

All sources capsules are welded encapsulations constructed of 300 series stainless steel or ARMCO Type 17-4PH stainless steel.

3. Radioactive Contents -

Gamma Industries Model No.

Authorized Contents

VD and VD(HP)

11.1 Tbq (300 Ci) of any
one of the following:

Barium-131	Manganese-54
Cadmium-109	Phosphorus-32
Calcium-45	Rubidium-86
Calcium-47	Selenium-75
Caesium-137	Strontium-85
Chlorine-36	Thallium-204
Chromium-51	Thulium-170
Iridium-192	Tin-113
Cobalt-60	Ytterbium-169
Iron-59	Zinc-65

¹ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 edition, as amended," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0166/S, REVISION 8

3. Radioactive Contents (Continued) -

Gamma Industries Model No.

Authorized Contents

NB, NBG, NB(HP)

0.93 TBq (25 Ci) of
Americium-241 OR 1.1 GBq
(30 mCi) of Radium-226 OR
18.5 GBq (500 mCi) of an
Americium-241 and Caesium-
137 mixture.

Universal source, single encapsulation

18.5 TBq (500 Ci) of
Iridium-192 OR 0.74 TBq (20
Ci) of Cobalt-60

Universal source, double encapsulation

185 TBq (5000 Ci) of
Iridium-192 OR 74 TBq (2000
Ci) of Cobalt-60

Single encapsulation with side weld

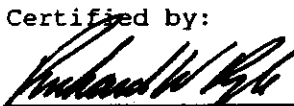
18.5 TBq (500 Ci) of
Iridium-192 OR 0.74 TBq (20
Ci) of Cobalt-60

4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 209 of the IAEA¹ regulations shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

5. Expiration Date - This certificate expires on September 1, 2002.

This certificate is issued in accordance with paragraph 703 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the May 16, 1997 petition submitted by Amersham Corporation of Burlington, MA, and in consideration of other information on file in this Office.

Certified by:


Alan I. Roberts

Associate Administrator for Hazardous Materials Safety

SEP - 3 1997

(DATE)

Revision 8 - Issued to approve capules against the 1985 IAEA regulations, and extend the expiration date of the previous certificate.